

REPORT OF  
CULTURAL RESOURCES  
INVESTIGATIONS NEAR  
**REDDEN**  
IN CONNECTION WITH  
WIDENING OF ROUTE 113  
NORTH OF  
GEORGETOWN, DELAWARE

Prepared by

**Edward F. Heite**

Heite Consulting  
Camden, Delaware

For Submission to

Delaware Department of State  
Division of Historical and Cultural Affairs  
State historic preservation office

And

Delaware Department of  
Transportation

And

United States Department of  
Transportation  
Federal Highway Administration

Prepared for

**David A. Bramble, Inc.**  
Chestertown, Maryland

April 8, 1993

## ABSTRACT

This is a report of Phase I cultural resource surveys in the vicinity of Route 113 near Redden State Forest, north of Georgetown. The survey was commissioned by David A. Bramble, Inc., the contractor currently widening the highway.

Purpose of the survey was to determine if any cultural resources exist in areas proposed for topsoil storage, as well as a batch plant site and an area proposed for disposal of unsuitable spoil.

No properties, eligible for listing in the National Register, were identified.

A brick foundation of indeterminate age and significance was identified and set aside for avoidance in the spoil disposal area.

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# 1. INTRODUCTION

DELAWARE DEPARTMENT OF Transportation proposes to widen and upgrade part of Route 113, north of Georgetown, Sussex County.

In order to comply with Section 106 of the National Historic Preservation Act and other applicable regulations, the Department of Transportation required the contractor to conduct Phase I cultural resource investigations in certain parts of the proposed construction area, outside the right-of-way, pursuant to stipulation 7 of the memorandum of agreement for Route 113.

These investigations were to be conducted on the contractor's nine proposed topsoil storage areas adjacent to the right-of-way. Also included were investigations at the site of a batch plant near the right-of-way and at a site where rejected fill material was to be dumped. In all cases, the impact to any cultural resources would be entirely confined to the surface of the ground. No deep footings or excavations were envisioned.

The contractor, David A. Bramble, Inc., engaged Heite Consulting to conduct the survey. Fieldwork was completed during the first week in February 1993 by Edward Heite, assisted by Sam Cammissa. Artifacts and notes are being curated at Island Field.

The right-of-way was previously surveyed by Berger Associates (LeeDecker et al., 1992).

This project was unusual, since avoidance was implicit in the project design.

Discovery of cultural resources in most situations leads inevitably to evaluation and, possibly, treatment. After the Phase I results are compiled, identified sites are evaluated at the Phase II level. Those judged eligible for the Register are then subjected to "treatments" that might include avoidance (usually preferred), reduction of adverse effects, or mitigation (usually Phase III data recovery). In most cases, if an archaeological site is found to be significant, it is excavated.

Here, the contractor identified avoidance as the preferred treatment. Any

discovery of cultural resources, regardless of evaluated significance, would automatically remove a property from consideration as a topsoil storage area.

When a cultural resource was found, it was marked off by the archaeologist and eliminated from the project area. This effective approach to cultural resource management short-circuits the three-step process, but is available only rarely.

## NATURAL ENVIRONMENT

The project area lies along the mid-peninsular drainage divide, where some of the water drains into the Chesapeake, and some into the Delaware. Some of the surface water does not naturally drain into either watershed, and must be assisted by man-made ditches.

Soils in the project area belong to the Pocomoke-Fallsington-Evesboro association, which are very-poorly-drained and poorly-drained soils overlying a moderately permeable subsoil of sandy loam or sandy clay loam, and excessively-drained soils that have a rapidly permeable sandy subsoil (Soil Conservation Service, 1974).

The dominant soil type is Pocomoke, a poorly-drained soil that occurs on upland flats and in depressions. The topsoil is typically black sandy loam, high in organic matter. The second most abundant soil is Fallsington, a poorly-drained upland soil that formed in loamy sediments. Evesboro soil, found in some parts of the project area, is excessively drained and sandy soil that has been favored for cemeteries. Klej soil, found on uplands, is well-drained loamy sand that often has a high water table.

While these soils might seem inhospitable to agriculture, they have been rendered productive by an extensive system of tax ditches that crisscross the project area.

The history of European-style agriculture in the project area has been punctuated by episodes of drainage

enthusiasm, during which farmers have spent large amounts of money to rid themselves of standing water. These investments, which have continued intermittently for two centuries, have marked periods of agricultural prosperity in southern Delaware.

Ditches have turned a swampy wilderness into productive farmland, but the struggle does not end. Old hand-dug ditches are being upgraded by machine cleaning and new ditches are being opened.

One of the ironies of the situation is the fact that drainage makes the land arable, but artificial irrigation is often required because the soils are sandy and "droughty." Once they are drained, they tend to become too dry for some crops.

Agriculture in the project area has always included subsistence farming, but during the past 75 years chicken farming has been significant. Chicken manure has improved the soils and chicken money has enriched the farmers.

Forestry is the major resource-exploiting industry in the project area. The native forest consisted of wetland hardwoods, but softwood plantations have come to dominate the area during the present century. The presence of a major state forestry unit at Redden has facilitated the development of progressive forestry practices in central Sussex County.

## BUILT ENVIRONMENT

When Georgetown was established in 1791, its site was ridiculed as being sixteen miles from nowhere, but it was near the geographical center of the county. For more than a century, population and government in Sussex County had revolved around Lewes, a thriving port town at the mouth of Delaware Bay. The new county seat was to be located in the wilderness, where hardscrabble farms and failed iron furnaces were the only economic activities. The courthouse site was an "old field," where agriculture had failed. The site clearly was not chosen for either its scenic beauty or its prosperity.

Construction of a new county seat led to establishment of the "state road," predecessor to the modern Route 113, connecting Georgetown with Milford and the north. Other roads, from the established population centers, led to Georgetown's "circle" where the small frame courthouse served as the focus of the new town.

Since this project focuses on the State Road to Georgetown, historic resources in the project area are largely roadside development. These include commercial establishments, strip development, and farmsteads built to face the highway.

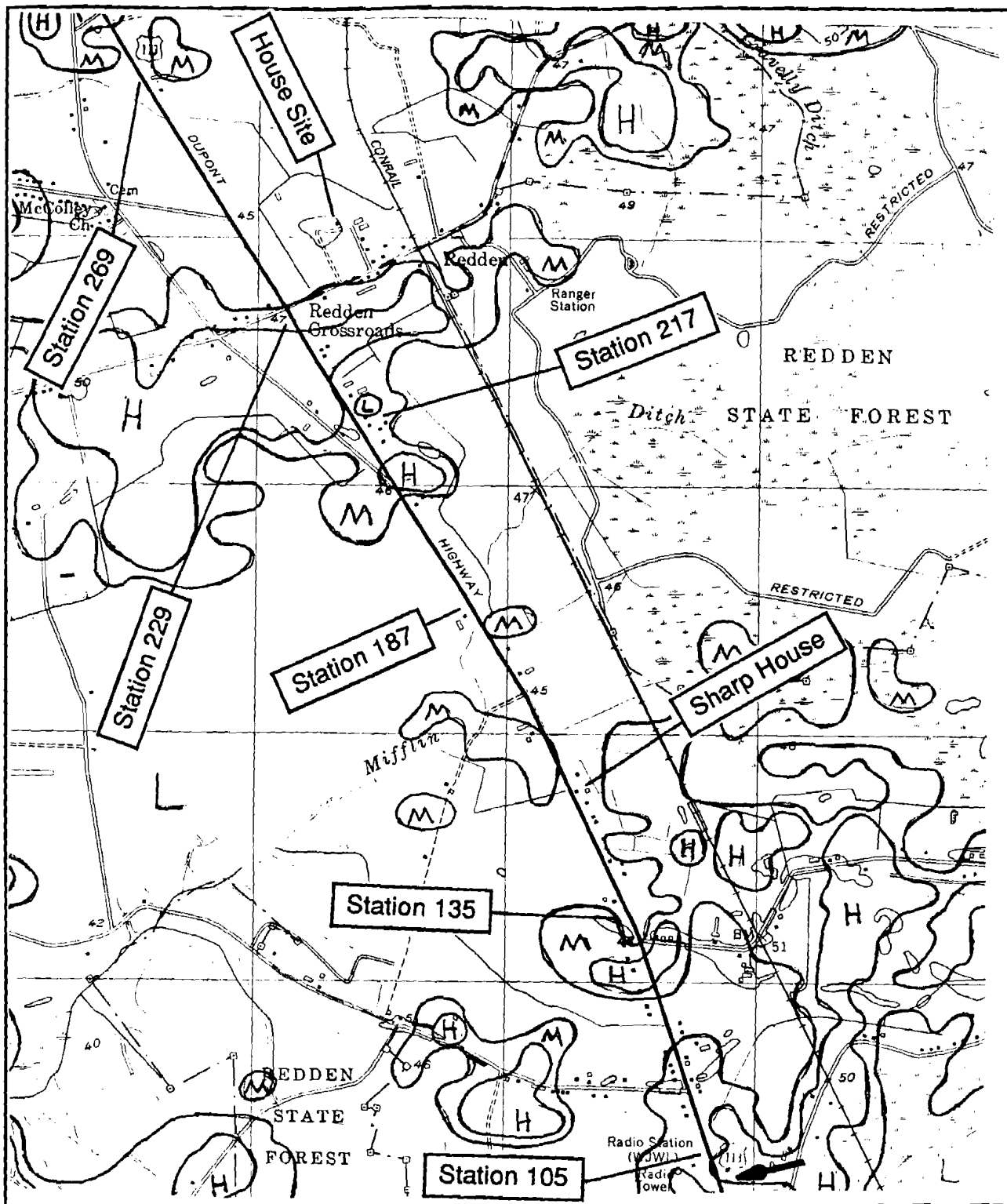


Figure 1  
**Project Area, southern part**

Detail of USGS Georgetown quadrangle. Arrow indicates the southern end of the project area. On this map are superimposed the archaeological probability assessments formulated by the University of Delaware Center for Archaeological Research. Boxed references indicate loci discussed in this report.



## 2. RESEARCH ORIENTATION AND STATE PLAN

PREVIOUS ARCHÆOLOGICAL research in the region has provided valuable insights into the locations of human activities through time. In some cases, settlement models are so well developed that sites can be predicted with uncanny accuracy, but there is yet much to be learned about human utilization of Sussex County.

### THEORETICAL ORIENTATION

This project reflects a cultural materialist theoretical orientation. Cultural materialism refers to the study of the effects of technology and environment on human behavior. Culture is viewed as a form of adaptation to both the natural environment and the social environment that results from the interaction of human individuals and groups (Custer 1986:2; cf. Harris 1968:240-41; Harris 1979).

This theoretical approach is explicitly incorporated into the Delaware management plan for prehistoric archæological resources (Custer 1986:2). The state plan for historic archæological resources (DeCunzio and Catts 1990:8), on the other hand, stresses the need to compare and evaluate interpretations resulting from different theoretical approaches. The plan emphasizes the need to "allow archæologists with different theoretical perspectives to address their own questions through the resource base in Delaware ... ."

A cultural materialist approach is implicit in the development of models which use features of the natural environment (such as soil types or topography) or elements of the cultural environment (such as roads, landings, or farmsteads) to predict the locations of a variety of property types, including prehistoric settlements, cemeteries, and industrial sites.

Working from this theoretical position, local researchers have developed a strategy designed for the efficient identification of both prehistoric and historic sites. The research strategy consists of the

identification and application of models that predict the locations of the major historic and prehistoric property types which can be expected within the project area. These property types include both prehistoric settlements and historic tofts and are of particular concern because they can provide information on a wider range of research questions than other properties considered in this study. Such an approach can be considered an empirical test of the positive statements of the models. It should be kept in mind, however, that this does not constitute a formal test of any model.

Consistent with the cultural materialist approach is an approach to sites of the historic period which emphasizes commercial networks, transportation, and settlement patterns. For the interpretation of spatial relationships between places and their regional significance, the insights of geographers are particularly useful (Hodder and Orton 1976).

While prehistoric settlement patterns may smack of central-place theory, historic settlement patterns can be explained almost entirely by application of the central-place paradigm.

A systematic, top-down approach to material culture demands that each element be viewed as part of a system, further divisible into subsystems and, in turn, sub-subsystems.

If one follows this line of reasoning, a house or object in a domestic setting cannot be considered in isolation, but as part of a toft. Each toft, in turn, is part of an agricultural or domestic system that includes production, consumption, disposal, and interaction with governmental systems, all of which in turn are belong to larger regional or national systems.

In more immediate terms, the systems approach demands interdisciplinary, or holistic, survey strategies that are intended to identify all parts of the system, past and



present, buried and visible, built and natural, tangible and intangible, in a single unified cultural landscape.

#### PREHISTORIC BACKGROUND

People arrived in the Delaware Valley near the end of the last (Wisconsin) glaciation (Kraft 1986:31). Glaciers entrapped so much water that the ocean lay fifty miles east of the present Sandy Hook, New Jersey. As glaciers retreated and the ocean advanced, area ecology changed.

During the twelve millenia before European settlement, Delaware's climate evolved from glacial tundra to temperate hardwood forest. Man's adaptation to the changing climate was marked by gradual cultural evolution. Custer and DeSantis (1986) have provided a useful table that correlates human and climatic change:

TABLE OF PREHISTORIC CHRONOLOGY		
<i>Dates</i>	<i>Environmental Episode</i>	<i>Cultural Period</i>
8080 BC	Late Glacial	Paleo-Indian /Early Archaic
6540 BC	Pre-Boreal/Boreal Atlantic	Middle Archaic
3110 BC	Sub-Boreal	Late Archaic
810 BC	Sub-Atlantic	
AD 1000		Woodland I
AD 1600		Woodland II

These environmental changes over the millenia have forced changes in man's subsistence strategies, family structure, and social organization.

#### HISTORICAL BACKGROUND

Roads and dams defined the geography of inland Delaware from earliest settlement to the present century. In the case of the present project, the road is the dominant historical force in the area.

People settled along the road after it was built in the last decade of the eighteenth century, because it gave them access to markets. As the soil was made arable through drainage, farms were developed.

When the railroad came through, followed by the duPont Highway, the Georgetown area became more and more closely connected to the larger economy.

Chicken farming finally brought a measure of agricultural prosperity during the middle of the twentieth century.

Highway-oriented properties, such as filling stations, used car lots, and other commercial sites, have increased with the traffic through the area. Today the project area is largely a strip development of miscellaneous dwelling and commercial properties strung through agricultural and forest lands.

#### PLANNING CONSIDERATIONS

The Delaware prehistoric cultural resources management plan identifies the project area as a region with medium significant site potential with no development pressure(Custer 1986:206). The project area itself is located in the Mid-Peninsular Drainage Divide Management Unit (Custer 1986:178, 184). In this management unit, our existing data quality is poor to fair. Scattered hunting sites from the Paleo period are the only prehistoric property type that has a high probability. Procurement sites of all periods have a moderate probability of occurring in this management unit, but one should not expect to find base camps of any period

The mid-peninsular drainage divide has been known to archæologists primarily for the Paleo sites found there. Other periods are poorly represented, but one site in the project area, 7S-F-68, has recently yielded material from the Archaic and Woodland periods (LeeDecker et al 1992:188).

The Delaware Comprehensive Historic Preservation Plan (Ames et al. 1989) places the project area in the lower peninsular geographic zone. Scattered European settlement had taken place near the project area by the middle of the seventeenth century, so that all but the earliest of the time periods established by the comprehensive plan are likely to be represented (Ames et al. 1989:37).

#### EXPECTED PROPERTY TYPES

For the prehistoric period, the only property types expected would be procurement sites, which are characterized by very sparse artifact scatters, limited tool variety, and ephemeral site boundaries.

For the historic period, four property types can be expected. First of these is the agricultural toft, defined as "a homestead; the site of a house and its outbuildings" in the *Oxford English Dictionary*. In the catalogue of historic property types provided as Appendix C in the Delaware Comprehensive Historic Preservation Plan, the less precise term "plantation and rural farm sites" appears to be roughly equivalent to the toft (Ames et al. 1989:146).

#### THE TOFT AS A PROPERTY TYPE

Systems-oriented researchers tend to favor the term "toft" to describe a farmstead, because it is construed to refer to all the land, buildings and artifacts related to the homestead, not merely to the random collection of buildings that might happen to survive above ground at the time of a cultural resource survey.

The systems approach to historical archaeology, espoused by Stanley South, demands a holistic view of every property in its total context, without regard for boundaries, temporal, spatial, or disciplinary.

In an agricultural holding, the toft is distinguished from the croft, a term which refers to the fields, meadows, woodlots, and other parts of the holding not in immediate use by the homestead. Kenneth Lewis, who used the toft as the sampling unit in his study of the frontier town of Camden, South Carolina, pointed out the importance of considering the toft as a unit of all the physical evidence immediately associated with the household (1977:175).

#### AGRICULTURAL FIELDS OR CROFTS

A second historic period property type is the agricultural field, one element of the croft and the locus of a particular variety of human activity. In the catalogue of property types for the Agriculture historic context (Ames et al. 1989:141), fields are seen as exemplifying the products of agriculture, specifically fruits and vegetables and textiles. Fields are seen as providing evidence of agricultural practices, particularly the use of soil additives, or "amendments." Not only archaeology, but soil science, chemistry, and farm-equipment history resources can be used to interpret the croft.

#### HIGHWAY-RELATED PROPERTY TYPES

The third expected property type is the highway system elements within the project area.

Abandoned or superseded roadways are potentially significant cultural resources if one seeks to understand past transportation patterns or property boundaries. In the project area, the main road to the south end of Delaware has been routed through at least three different rights-of-way since the time of the American Revolution.

Ancillary to the transportation structures are the properties that developed because of the highway, including driveways, roadside businesses, strip housing developments, and even billboards. This fourth property type is ably defined by the Berger group as an appendix to their study (LeeDecker et al 1992).

#### EVALUATION CRITERIA

A primary purpose of any Phase I survey is to identify the locations of historic and prehistoric properties. If any historic properties are found, it will be necessary to evaluate them in terms of possible eligibility for listing on the National Register of Historic Places. This evaluation function normally is part of the Phase II evaluation, but Phase I projects commonly make a "first cut" or triage, dividing sites among those that are clearly eligible or ineligible, and those which require further study.

In a group of planning documents for the Route 13 Relief Route corridor studies, Custer and his associates have developed a framework for evaluating both prehistoric and historic sites (Custer, Jehle, Klatka, and Eveleigh 1984:113-129; Custer and Bachman 1986:192-194; Custer, Bachman, and Grettler 1986:178-180). The framework for prehistoric sites can be summarized as follows, in descending order of significance:

1. All unplowed sites, regardless of period of occupation or site type, are of high potential significance.
2. Late Paleo-Indian and Archaic sites which have been plowed, but which are otherwise undisturbed, are of high potential significance.

3. Plowed base camps of all time periods are considered potentially highly significant.

4. Plowed sites which are not procurement sites and are associated with bay/basin features are potentially of medium significance.

5. Plowed, disturbed, and eroded sites of all types are potentially of low significance.

6. Plowed procurement sites are also potentially of low significance.

Since procurement sites are the only prehistoric property type expected in the project area, evidence for plowing may be taken as constructive evidence that not eligible site is likely to exist.

It is therefore possible to evaluate a locus under these conditions simply by testing for evidence of plowing, without first determining that cultural remains exist.

Criteria for evaluating historic period sites developed in the planning studies cited above apply primarily to toft sites. The characteristics of significant sites are summarized as follows (derived from Custer and Bachman 1986:194):

1. Sites containing well preserved remains are highly significant.

2. Sites which display a range of well-defined activity areas are highly significant.

3. Sites which contain dense deposits of cultural material are highly significant.

4. Sites in which temporally distinct occupation loci can be identified, either as part of a long term occupation of the site or as a single short term occupation, are highly significant.

The Berger group suggested that roadside architectures should be evaluated in terms of all four National Register criteria, depending upon their ability to illustrate aspects of the automobile phenomenon (LeeDecker et al 1992:309-312).

#### VALUE OF PREDICTIVE MODELS

Predictive models are the surveyor's most reliable tool, for they permit an orderly approach to large areas, and facilitate

economical allocation of resources. The Berger survey of the project area employed predictive models, but the present study was a 100% non-exclusive survey of small, well-defined, areas.

Because they are imposed artificially by researchers, survey strategies, by definition, will skew results. Today's site surveyors attempt to minimize subjective errors by using predictive models, random samples, and fixed interval tests. None of these strategies can conclusively demonstrate the absence of sites; nor can they guarantee identification of all sites that exist in a given study area.

Short of 100% excavation, any strategy is nothing but an educated guess, tempered with statistics. However, experience over the last 20 years has shown that the use of an informed strategy is the most effective way to maximize site identification, that is to say, to identify the largest number of sites with the least amount of effort.

The oldest strategy is the predictive model, used intuitively for decades and most recently codified and quantified on the basis of non-exclusive random surveys. Predictive models attempt to identify and quantify factors that help determine site locations, based upon data derived from surveys.

Too often, however, underlying surveys have been either subjective or less than exhaustive, causing models to be skewed. A good predictive model, to be accepted as more or less reliable, must be based entirely upon data that was not generated in a subjective manner.

Such a model has been incorporated into the state management plan for prehistoric resources (Custer 1986).

At the same time, regional surveys in Kent and New Castle Counties have made it possible to quantify some of the relationships between site location and ecological factors (Custer, Bachman, and Grettler 1986; Custer and Bachman 1986).

Since historically most major sites have been identified by means other than random or non-exclusive surveys, it is difficult to justify using models based upon

the whole corpus of survey data in many localities. This difficulty should not exist in the study area, since the Berger study was a non-exclusive survey.

#### PROJECT AREA PREVIOUS RESEARCH

The highway project has been thoroughly investigated, through the Phase III level, by Louis Berger and Associates, Inc. (LeeDecker et al 1992). The Berger survey was restricted to the right-of-way, but it addressed cultural resources that were immediately adjacent to most of the areas covered by the present study.

All the proposed topsoil storage areas are immediately adjacent to sites that were evaluated by the Berger group.

#### APPROACH AND METHODS

Survey consisted of field reconnaissance, culminating in field testing. Where fields were available, with good visibility, for walkover survey, this method

was used. In other cases, such as lawns, it was necessary to sink shovel test pits.

Since project impact will be confined to the topsoil, there was no need to test for buried features. Shovel test pits were used in the grassed areas to determine if they had been plowed, and if significant quantities of artifacts are present. Where the sites were grassed and in low or moderate probability zones, shovel testing was minimal.

Where appropriate, results obtained from the earlier Berger survey in the adjacent right-of-way were accepted. In particular, it was felt that the Berger evaluations of site probability are a credible basis for decision making. Some of the topsoil storage areas are in places where the Berger group chose not to test at all, on the basis of predictive models.

The Berger group's sites were re-evaluated in order to expand coverage to consider the topsoil storage areas.

### 3. BACKGROUND HISTORY

THE PROJECT AREA is a stretch of highway that passes along the mid-peninsular drainage divide, the spine of Delmarva.

#### PREHISTORY

Mammoths, musk ox, horses, caribou, and walrus provided food for dire wolf, short-faced bear, and other predators. Man was among the smaller competitors in the tundra food chain, but his skills compensated for his physical shortcomings. Nomadic people of this Paleo-Indian period were among the most skilled makers of stone tools in the world. They would travel great distances to quarry the best flinty cobbles from which they made exquisite spearpoints, knives, and small tools.

Paleo – Indian hunting – gathering society lasted until about 6,500 BC, when the Atlantic climate episode and the Archaic period of prehistory began (Custer 1984:31). Northern hardwood forests had replaced the tundra, the ocean had risen, and the climate was warmer. Pleistocene megafauna were replaced by smaller game, which required different hunting techniques and tools.

The mid-peninsular divide area has been particularly rich in finds of Paleo materials. If sites of this period are found in lower Delmarva, there is a high probability that they will be procurement sites near poorly-drained land along the divide (Custer 1986:49).

Archaic people fashioned tools made of quartz, a material that is less tractable than the flinty materials that Paleo people had favored. Ground stone axes and other heavy tools appear during this period.

By 3,000 BC, prehistoric society was decidedly different. Because people had stopped moving around so much, regional cultural differences began to appear in the artifact assemblages. Sedentary lifestyles ultimately led to horticulture, complex religious practices, and the accumulation of more, less portable, material goods.

The last prehistoric period, the Woodland, is characterized by larger groups of people living together in villages, using pottery and other heavy or fragile goods that would have been difficult to move from place to place. Woodland people tended to form more or less permanent settlements at places with abundant multiple resources. They sent out hunting parties, but they seldom dispersed whole populations to live off the land in the manner of their hunter-gatherer ancestors.

The Woodland I period, beginning about 3,000 B. C., is marked by the introduction of pottery. Elaborate mortuary practices and broad trading networks marked the later part of the period, which ended around 1,000 A. D.

The Woodland II period saw the disappearance of the broad trading networks. People became even more sedentary during this period.

People of the Woodland II period were the ones who met the first European settlers on the Delaware coast. Unaware of the natives' long history, descendants of these European settlers long assumed that the Woodland period culture reflected native lifestyles throughout prehistory.

Only during the present century has archaeology revealed the rich variety and long time-span of Delaware's prehistoric cultures during the twelve millenia from glacial times to contact. After European contact, native culture faded away, until little remained in the consciousness of the people.

#### CONTACT PERIOD

The contact period is the time of initial interaction between European colonists and Native American residents. It begins with the first, indirect experience of Delaware Native Americans with European trade goods and diseases and ends with near-disappearance from Delaware of Native Americans as recognizable cultural groups.



It is likely that contact sites will not be easily distinguished from sites of the Woodland II period and European-American sites of a slightly later period. Less than ten confirmed or suspected contact-period sites have been catalogued in Delaware.

#### COLONIZATION

The area now known as Sussex County was part of the Dutch Zwaanendael patroonship grant of 1630, which extended from the mouth of Delaware Bay to Bombay Hook. On this huge tract, the Dutch erected only tentative settlements, most concentrated near the mouth of the Bay. By the time the Dutch lost their colony to the English in 1664, the back country remained unsettled.

The project area was not colonized during the Dutch period, but there was a sizable settlement on the coast during the seventeenth century. The Georgetown area remained sparsely-settled wilderness until the Revolutionary period.

William Penn's accession in 1682 sparked a new land rush, as his Quaker associates moved into the Delaware Valley in large numbers.

Under the Dutch and the Duke of York, local courts had taken charge of parcelling out the unclaimed land, but the new proprietor soon concentrated authority in his own land office at Philadelphia. The ensuing period was marked by large grants to Philadelphia merchants and speculators, including members of the Penn family, who effectively controlled the interior of Sussex County for another century.

The Maryland proprietors claimed western Sussex County under their English charter, and land titles remained in doubt as long as the issue was unsettled. Final settlement of the boundary between Maryland and Delaware did not come until the eve of the Revolution, when a British court ordered the drawing of the present western boundary of Delaware.

During the latter part of the eighteenth century and the first half of the nineteenth century, the central part of Sussex County was the site of iron furnaces, bloomeries, and charcoal burners. Because of the difficulty involved with getting products out, the forest

resources could not be exploited until after the railroad arrived, just before the Civil War.

Farms tended to be small, concentrated on the scanty high ground, surrounded by deep woods. During the nineteenth century, the tax ditch movement added to the arable land in the area.

The town of Georgetown prospered as a county seat and as a minor commercial area, but it remained largely a single-focus community centred on the courthouse.

When canneries were built along the rail lines in Sussex County after the Civil War, local farmers were able to serve broad markets. But the land remained sandy, infertile and droughty until the advent of large-scale chicken farming during the present century provided a cheap form of soil improvement.

#### PROJECT AREA HIGHWAY HISTORY

The first north-south road through the project area, the State Road, was built late in the eighteenth century to connect the new county seat of Georgetown with Milford and Kent County to the north. Post roads already had existed, from earliest settlements, along the coast.

The State Road in turn was superseded by the Coleman duPont Road. This modern highway, built by Mr. duPont with his own funds, was constructed from a point south of Wilmington to the Maryland line. Before it was finished, the road-building project was taken over by the state, with the establishment of the Delaware State Highway Department.

Coleman duPont envisioned a four-lane intermodal corridor, but only a two-lane road was built in Sussex County. The stretch from Dover to Wilmington was dualized soon after it was completed, but the idea of needing a four-lane road to Georgetown was considered comical. Farmers gladly sold the rights-of-way, but people continued to build houses immediately adjacent to the right-of-way line, and to landscape the public land as if it were their front yards.

The current project amounts to a final realization of Mr. duPont's original plan for a state-wide four-lane road, eighty years after it was originally planned. His foresight in

designing for eventual construction of the second roadway became apparent as the new road was being designed. Unfortunately, his original plan for purchasing a 200-foot right-of-way had not been followed throughout the project, and the state was required to buy, at modern prices, tracts he offered to donate.

Bypasses around towns were another of Coleman duPont's unpopular ideas. He wanted to build his roads around the towns, but local businesses insisted that this radical innovation would ruin the communities. After World War II, the state finally began building the bypasses, one of which is the Georgetown bypass at the south end of the project area.

Since Mr. duPont's youth had been spent working for his father's trolley line, he naturally expected an interurban electric railway to share the corridor, but the lines never reached so far south. Electric railways actually operated in New Castle and Kent counties, but light rail for Sussex County remains an unrealized dream.

The duPont road today is known as U. S. Route 113. The old State Road, where he bypassed it, is State Route 213.

## FORESTRY

When western Sussex County was first settled, woodland was considered nearly worthless. Forest industries, such as charcoal and iron production, dominated the swampy interior. Later, gum logs were brought out to make veneer for peach baskets.

When the duPont highway was opened, Delaware's first professional forester was brought into state government. The visionaries who designed the road saw forestry development as a vital part of the economic development process.

The Redden and Ellendale state forests were established by the Delaware forestry board and developed by CCC labor during the Depression. Through forest management practices, the state was able to make the upland swamps into money-making tree farms.

At the core of the state's forestry effort was the Redden facility near the project area. Using a former Pennsylvania Railroad retreat facility as its basis, the state transformed wasteland into Redden State Forest.



## 4. FIELD INVESTIGATIONS

THE AUTHOR VISITED THE PROJECT AREA during the first week of February 1993. Each project locus was identified and then investigated, following the format established by the Berger survey group.

Prehistoric site probability has been calculated and mapped by the University of Delaware Center for Archaeological Research. These maps were consulted and incorporated into the survey (Figures 1 and 2). Regardless of a site's predicted probability for containing sites, it was given at least a walkover survey.

The current study followed the Berger group's practice of identifying test locations in terms of stations along the right-of-way. Wherever possible, surface reconnaissance was employed, usually in the form of a walkover of a plowed field. Topsoil storage areas are typically a half acre or an acre, but walkovers were not confined to this size.

In four instances, there was no soil visibility. These were places where the topsoil storage will be placed on a grassed lawn that had been a cultivated field.

The most likely prehistoric property type here is the small procurement site, which is not considered to be significant if it has ever been cultivated. Therefore, it is necessary only to determine that cultivation has taken place, in order to determine that no significant procurement site is present.

Historic sites, or the very unlikely large prehistoric base camps, can be detected in very limited topsoil testing, since they contain a large number of artifacts.

Since all the proposed topsoil storage areas have been cultivated from time to time, the plowzone can be interpreted as having poor integrity. In the state's hierarchy, plowed surface sites have a low level of potential significance unless they are also very early. Therefore no subsurface tests were undertaken below plowsoil.

### SURVEY AREA: STATION 105, WSEA

This half-acre site on the west side of the road was classified as possessing a moderate probability of containing a prehistoric site. It is currently the lawn of the radio station. Soil is Pocomoke sandy loam. One shovel test pit was sunk west of the right-of-way. The black sandy topsoil was 15 inches deep, over grey subsoil. No artifacts were found. The soil appears to have been cultivated at some time in the past.

Berger's four tests, at station 108, were situated near the north end of this same storage area. They found no site, even though their test was in the area of highest relative site probability, near a stream.

Proposed impact on this location would be limited to deposit and removal of topsoil reserves. Our tests confirmed the previous investigators' conclusion that this project area contains no resources that would be eligible for inclusion in the National Register.

### SURVEY AREA: STATION 105, EAST SIDE

A similar situation existed on the east side of the road, next to an automobile repair shop. The proposed one-acre storage site is well-kept lawn next to a drainage ditch.

This site was classified as possessing a moderate probability of containing a prehistoric site. Soil is Pocomoke sandy loam, which does not have a high incidence of sites. One shovel test pit was sunk east of the right-of-way. The site had apparently been plowed previously. The black sandy topsoil was 15" deep, over grey subsoil. No artifacts were found in the shovel test pit.

Proposed impact on this location will be limited to deposit and removal of topsoil removed from the right-of-way. Our test concluded that this project area contains no resources eligible for inclusion in the National Register that would be impacted by the proposed storage activity.

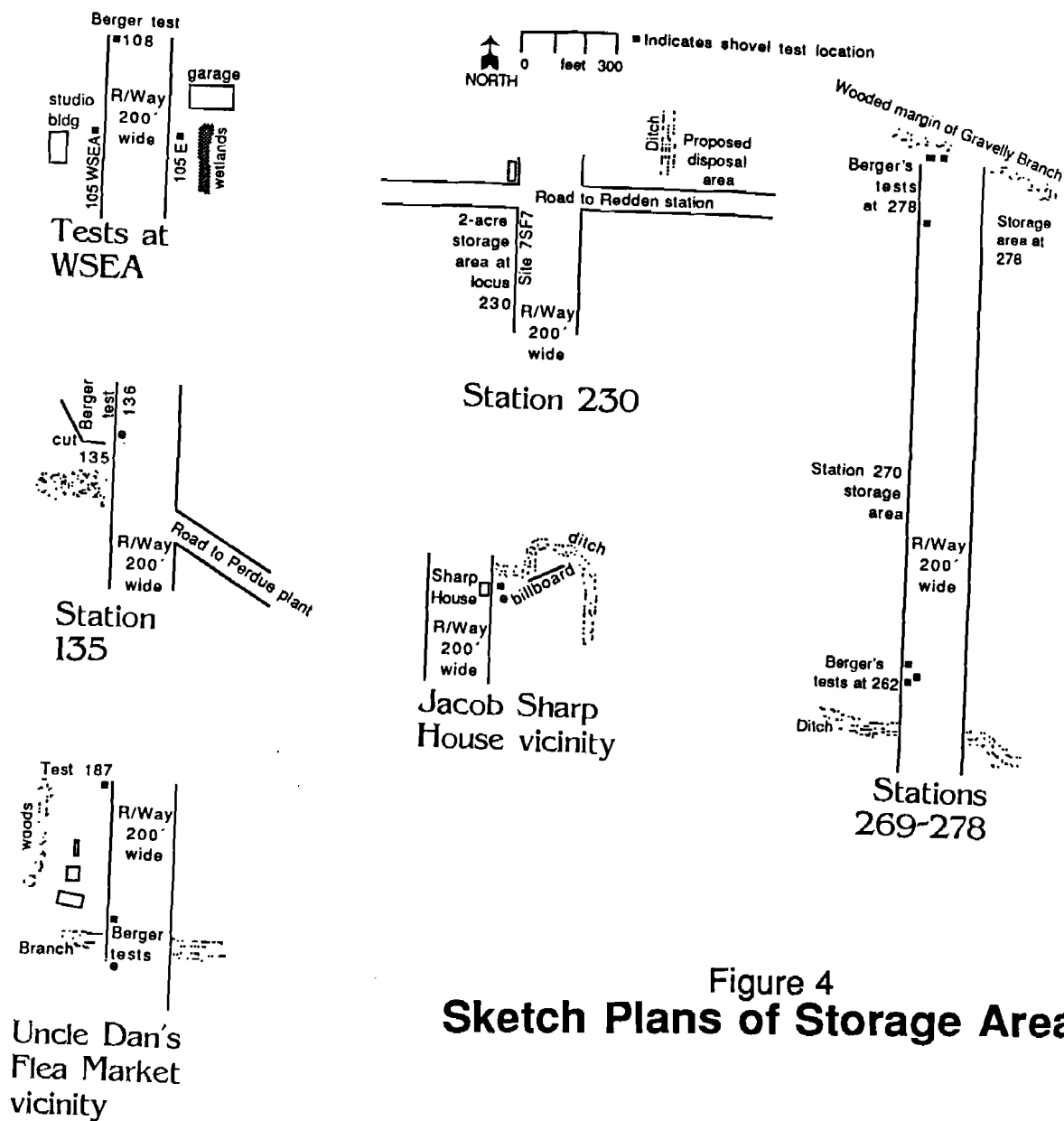
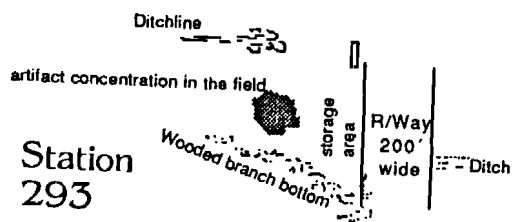


Figure 4  
Sketch Plans of Storage Areas



Because the two loci at station 105 are situated on the old state road that preceded Route 113, one cannot dismiss the possibility that early roadside development occurred here.

#### SURVEY AREA: STATION 135

This half-acre site was classified as possessing a moderate probability of containing a prehistoric site. The proposed storage area has been used for storage of pine logs, indicated by a deposit of bark on the surface of the ground. Soil is mapped as Fallsington sandy loam, which is slightly more hospitable to site locations than Pocomoke.

Because this locus is situated on the old state road that preceded Route 113, one cannot dismiss the possibility that early roadside development occurred here.

It appears from the topography that several feet of earth has been removed from the proposed storage area.

The Berger group sank four tests a short distance to the north, at station 136, and recovered one square cut nail.

In view of the negative results from the Berger survey and the apparent removal of surface deposits, we concluded that no cultural resources, eligible for the National Register, exist at the site.

#### SURVEY AREA: JACOB SHARP HOUSE

The one-acre yard of the Jacob Sharp House, state site archaeological number 7S F 72 and CRS number S-8449, was extensively examined during the Berger survey (LeeDecker et als. 1992:109). Cultural Heritage Research Services, Inc., also noted the house (Tabachnick and Keller 1992: 40) in connection with an east-west corridor study. Because of the house, the site has a high probability of containing remains that relate to domestic archaeology.

Because this locus is situated on the old state road that preceded Route 113, one cannot dismiss the possibility that early roadside development occurred here.

The soil is mapped as Pocomoke sandy loam, which is drained by the adjacent Mifflin Ditch system. We sank two shovel

test pits in the back garden, where the storage activity will take place. Our test confirmed the previous two investigators' evaluation that the site contains nothing eligible for the National Register. The proposed storage area was recently a garden, and probably was cropland before the house was built, over a century ago.

#### SURVEY AREA: STATION 187

This is the mowed lawn of an establishment called Uncle Dan's, a flea market. The half-acre site was evaluated as having a low potential for containing prehistoric sites. The soil type is Pocomoke sandy loam.

Because this locus is situated on the old state road that preceded Route 113, one cannot dismiss the possibility that early roadside development occurred here.

The Berger group sank four shovel test pits in a higher-probability area a short distance south, at stations 181 and 183, near the bank of a stream. Their nine tests uncovered nothing.

The black topsoil in our only shovel test was a foot deep over grey sand. No artifacts were present in the test, which appeared to be previously-plowed soil.

Proposed impact on this location will be limited to deposit and removal of topsoil removed from the right-of-way. Our test concluded that this project area contains no resources eligible for inclusion in the National Register that would be impacted by the proposed storage activity.

#### SURVEY AREA: PLANT SITE, STATION 217

The proposed batch plant site, east of the highway and behind a utility building factory, is entirely filled ground. Of the four acres of cleared ground, about two acres will be used for the plant. Louis Thibeau told us that he has owned the property for ten years. Before he bought the place, the proposed batch site had been used as a junk-disposal area. It was kept wet by the spoil piles thrown up from the adjacent tax ditch.

The property possesses a very low likelihood of containing historic habitation sites. It could have been used as a dump.

A few years ago, Thibeau cleared the site, dug a deep pond, and deposited eighteen inches or more of fill over the site. This fill, derived from the pond, is the present ground surface.

Site 7S F 68, which contained historic and prehistoric remains, lay across the road from this location. There is no reason to conclude that this poorly-drained plant site has ever been part of the well-drained archaeological site.

In view of the site's original wet condition, and the clearance activities undertaken by the owner, we conclude that the plant site is not likely to contain any cultural resources eligible for the National Register.

#### SURVEY AREA: REDDEN DISPOSAL AREA

Northeast of the Redden crossroads is an area, also owned by Mr. Thibeau, that has been identified for disposal of earth judged unsuitable for use as fill in the project. The tract lies east of a ditch and north of Road 565. It is about 600 by 700 feet.

Most of the soil is low-lying Fallsington, but the northeast corner is a hill mapped as Klej. "Hill" in local parlance means that the high part of the field is nine feet higher than the low side. This relative elevation can be important when one is identifying places for archaeological site probability. The probability map shows the entire disposal area as low, but the elevation possesses a higher probability of its own.

Outside the hill, the boggy property has a very low probability of containing a site from the historic period.

The USGS Georgetown quadrangle indicates that a house was standing here fairly recently. No toft appears here on the Beers map of 1868 (Figure 3). At that time, the property was part of the James Redden estate, which owned a house on the present Route 213 at McColley's Church.

The site has recently been logged, and stumps have been pulled from the ground but not removed. In the thrown-up earth on the stumps it was possible to examine a fair amount of soil. As predicted, the Fallsington soil did not reveal any site evidence except

pearl button blanks, which were commonly used as road metalling in this area.

On the hill, however, hand-made bricks and unfired brick clay were found in the upthrust tree roots. The bricks possessed the characteristic unevenness of clamp firing and the struck-off appearance of hand-moulded bricks (Heite 1968, 1973).

Further probing indicated the existence of a cellar hole and an intact foundation, about 50 by 35 feet, built of handmade bricks. The ground post to a lightning rod system marked the northeast corner of the ruin. This appears to be the foundation of the house shown on the USGS map.

While handmade bricks of this type, made on site, normally are not found after the middle of the nineteenth century, at least one house in the area was built of such bricks during living memory. An acquaintance of the author has recounted that the bricks for his house in Georgetown were made just before World War II by a relative who fired clamps in the forest.

Since brick clay was found on the site, there is a possibility that the bricks were made in a clamp on this site, after 1868. If this is the case, it is a very late example of the brickmaker's craft.

At the request of the contractor, the author flagged the site, which will be mapped and fenced to protect it against damage during spoil deposit activities.

Further investigation might show that the house site is eligible for the National Register, especially if a very late example of a clamp should be found in association with the house site. However, since the project will have no impact on the resource, no further investigation will be warranted at this time.

#### SURVEY AREA: STATION 229-230

Site 7S F 67 was identified by the Berger survey as lying almost entirely within the right-of-way adjacent to this proposed two-acre topsoil storage area. The soils are Klej and Fallsington. Historic artifacts were found in a Phase II survey by the Berger group, who also conducted deed research. A transient prehistoric occupation was detected (LeeDecker et al 1992:199).

Like the disposal area, this site was part of the James Redden farm at the time of the Beers *Atlas* map.

In connection with this survey, the author conducted a walkover survey outside the right-of-way, but adjacent to the identified limits of 7S F 67. No artifacts were found, even though the field had fair surface visibility. We concur in the Berger group's evaluation that the site is not eligible for the Register.

Because this locus is not situated on the old state road that preceded Route 113, there is a low possibility that early roadside development occurred here.

#### SURVEY AREA: STATION 269

A half-acre topsoil storage area at station 269 is on the west side of the right-of-way in a cultivated field on the Wilson farm. Visibility was good but no artifacts were identified during a walkover survey. The soil is mapped as Woodstown, the same type identified in the Berger group's test at station 262.

As the location is not close to a natural watercourse, and is not particularly elevated, it is unlikely to contain a prehistoric site. A low to moderate probability is indicated on the UDCAR map. The Berger tests had been closer to the watercourse and therefore in a higher probability area.

Proposed impact on this location will be limited to deposit and removal of topsoil removed from the right-of-way. Our test concluded that this project area contains no resources eligible for inclusion in the National Register that would be impacted by the proposed storage activity.

#### SURVEY AREA: STATION 278

This proposed topsoil storage area lies east of the highway, near Gravelly Branch. The Berger group tested a tract directly across the road that had been known to yield prehistoric artifacts (also station 278). Their tests, however, did not yield conclusive evidence of prehistoric occupation.

The Berger test was in the area of highest probability in the immediate vicinity, a well-drained ridge on the south bank of

Gravelly Branch. The owner, Mr. Wilson, reported having found artifacts in that survey area, but only a single jasper flake was recovered.

Our test area was an open field adjacent to the east edge of the right-of-way, where the owner reports no artifacts have been found. The ridge, of Matawan loamy sand, extends into the field, but most of the field is mapped as Woodstown.

Surface visibility in the plowed field was good, and the walkover was extended beyond the immediate area of the topsoil storage. Three artifacts were found: a milky quartz chunk, a white-clay pipe stem fragment, and a sherd of historic-period red earthenware with mottled brown glaze.

After the pipe stem was found in the storage area, the search was extended halfway across the field. No concentration was found that could have been the source of the potsherd or the pipe. The quartz chunk was found in this extended search, beyond the storage area.

The property owner pointed out a house site on the east end of the same field, not far from the railroad that was still standing when the USGS map (Figure 2) was published. This house site was examined but not field collected. It appears to be a late nineteenth century house site, unlikely to have produced the pipe stem fragment.

Lacking a site focus, the finds must be identified as chance scatterings from an unidentified source. For purposes of the present project, no site exists in the area of impact. Lacking integrity, the locus cannot be defined as eligible for the National Register.

Proposed impact on this location will be limited to deposit and removal of topsoil removed from the right-of-way. Our test concluded that this project area contains no resources eligible for inclusion in the National Register that would be impacted by the proposed storage activity.

#### SURVEY AREA: STATION 293

The last storage site investigated is west of the highway and north of Gravelly Branch. Surface visibility was excellent. Because this locus is not situated on the old state road that preceded Route 113, it

possesses a low possibility that early roadside development occurred here.

The soil of this plowed field is mapped as Woodstown, and is assigned a moderate to high prehistoric sensitivity because of the nearness of a major ditch, part of the Gravelly Branch system.

#### ARTIFACTS FROM STATION 293

Utilitarian cream-colored stoneware, brown glazed inside	3 sherds
European porcelain tableware	2 sherds
White porcelain plumbing fixture	1 sherd
White glass Mason jar lid liners	3 sherds
Aqua glass jar fragment	1 sherd
Undecorated white refined earthenware	4 sherds
Blue transfer printed white refined earthenware	1 sherd
Raised pattern white earthenware with blue color in the glaze	1 sherd
Undecorated white ironstone	2 sherds
Clear vessel glass, apparently contemporary	2 sherds
Pearl button blank	1 piece
Clam shell	1 piece

The Berger group had surveyed the ditch bank area, near station 287. They found no artifacts in four tests on a slight ridge mapped as Elkton soil. Because it lies much closer to a watercourse, the Berger test locus

is much more likely to contain cultural remains.

The field method was walkover survey, facilitated by good surface visibility. A few artifacts were found within 100 feet of the right-of-way edge, in the area to be impacted by topsoil storage, but the site proper is well way from the proposed storage area.

The survey was extended westward into the field, and artifact density increased, until a site centered around 250 feet from the right-of-way could be identified.

The artifacts did not include concentration of such structural materials as nails and bricks that would have betrayed a house site, but instead appeared to be late-nineteenth-century or early-twentieth-century domestic trash.

The artifact concentration does not exhibit any readily identifiable boundaries that would indicate that it has integrity. Instead, the concentration is spread over a wide area without a focus.

Proposed impact on this location will be limited to deposit and removal of topsoil removed from the right-of-way. Our test concluded that this project area contains no resources eligible for inclusion in the National Register that would be impacted by the proposed storage activity.

## 5. CONCLUSIONS AND RECOMMENDATIONS

NO CULTURAL RESOURCES, eligible for the National Register of Historic Places, were found in the project area. The survey met the research objectives because it fulfilled the project goal of determining the existence or non-existence of eligible sites in the impact area of the proposed activity. The only substantial discovery, a house foundation, will be avoided, without further evaluation.

Expected property types included prehistoric procurement sites. For the historic

period, tofts, crofts, and highway-related features were among the expected property types.

These property types were identified in the vicinity by the previous consultant. No properties, eligible for the National Register, were identified in either the previous survey or the previous project as being vulnerable to impact from the proposed work. No further investigations are recommended.

### SUMMARY OF FIELD EXAMINATIONS

<i>Station No.</i>	<i>Side</i>	<i>Type of reconnaissance</i>	<i>Artifacts</i>	<i>Comments</i>
105	west	one shovel test pit	none	Confirms Berger conclusion that no historic or prehistoric site is present; evidence indicates that the site has been plowed. The only expected property type was a prehistoric procurement site. Plowed prehistoric procurement sites are not considered eligible.
105	east	one shovel test pit	none	No artifacts present, evidence for plowing
135	west	surface reconnaissance	none	Top layer of soil has been removed, perhaps two or three feet, destroying any site that might have existed
156	east	two shovel test pits	glass and brick	Site and house were evaluated by the Berger team as the Sharp House and found to be ineligible. We concur
187	west	one shovel test pit	none	Confirms Berger conclusion that no site is present, and evidence exists for plowing. Since a prehistoric procurement site is the only expected property type, and since plowed procurement sites are not considered potentially eligible, evidence for plowing is sufficient to eliminate a locus from consideration.
217	east	walkover on plant site	none	Recent fill over former wetland that possessed extremely low site probability. Site was covered by a junk deposit that was bulldozed away and then covered with fill 18 inches deep
Redden area	east	walkover and test pits in area of soil disposal	button blanks	Foundation of a house identified on a hill in a formerly forested area flagged for preservation. Rest of the property heavily disturbed.
229-30	west	walkover	none	Good field visibility, no artifacts, identical with west side of site 7S F 67 reported by Berger group
269	west	walkover	none	Good field visibility, no artifacts
278	east	walkover	pipestem pottery	Good field visibility, scatter of artifacts, but no defined site location
293	west	walkover	misc. 19th c.	Good field visibility, scatter of artifacts observed west of the proposed storage area

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# PROFESSIONAL QUALIFICATIONS

Heite Consulting, a firm consisting of Dr. Louise Heite and Edward F. Heite, specializes almost exclusively in reconnaissance-level and phase I cultural resource management studies. Rather than attempt large projects, the principals concentrate upon projects that they can execute themselves, without assistants. Project sponsors are therefore assured that each investigation receives the full attention of a qualified senior researcher.

Edward Heite served as Historic Registrar and Chief of the Bureau of Archives and Records Management for the State of Delaware. His assignments with the state included the statewide survey of historic sites and the restoration of the Old State House at Dover. He was previously archaeological historian for the Virginia Historic Landmarks Commission, for whom he directed the excavation of eighteenth-century Fredericksville Furnace and the seventeenth-century Hallowes site in Virginia. He recently completed the salvage excavation of a nineteenth-century cannery site for the Delaware Department of Transportation. He is currently principal investigator for the Department's excavation of a deeply-stratified Paleo-Indian site in Kent County.

During the summer of 1989, both worked as archaeologists and artifact analysts for the City of Reykjavík, Iceland. Dr. Louise Heite is currently working in Iceland, where she has completed a study of medieval wool textiles.

Ms. Cara Lee Blume, a doctoral candidate at the Catholic University with more than twenty years' experience in Delaware prehistory, is consultant to the firm. She is currently preparing her dissertation on the prehistory of Sussex County. Her master's thesis concerned historical archaeology at the Delaware State House.

Since 1980, the firm has completed reconnaissance-level studies and phase I studies for the Philadelphia District, United States Army Corps of Engineers, National Park Service, United States Navy, Waste Management of North America, BCM Eastern, Inc., the Trustees of the New Castle Common, and the Delaware Department of Transportation. A list of projects and clients is available upon request.

Current or recent projects include the Scarborough Road project for Delaware Department of Transportation; the Little Mill / Red Clay Interceptor project with Tatman and Lee for New Castle County; a proposed wastewater treatment plant for Berlin, Maryland; and a phase I survey for the National Park Service at Assateague National Seashore, Maryland.

## CERTIFICATIONS

The firm is listed in the Virginia, Delaware, Maryland, and Pennsylvania SHPO lists of Cultural Resource Management consultants.

Both principals of the firm are members of the Society of Professional Archaeologists, certified in theoretical/archival research, document research, and historical archaeology. Ms. Blume also has been certified by SOPA. Edward Heite is also certified by SOPA in field research and cultural resource management. They meet the professional standards for both historians and archaeologists set forth in 36 CFR Part 61 and 43 CFR Part 7 (1984) and in the Secretary of the Interior's standards and guidelines for archaeology and historic preservation. Edward Heite also satisfies the requirements for an architectural historian (*Federal Register* Thursday, September 29, 1983, pages 44738-44740).